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UNITED STATES GOVERNMENT

Memorandum

ES M67 139

TO : Chief, Real Estate and Construction
Division, OL

DATE: 20 FEB 1967

FROM : Chief, Engineering Staff, OC

SUBJECT: Power Plant Addition and Modification
25X1A at [REDACTED] Receiver Site

25X1C 1. It is requested that your office negotiate [REDACTED] for construction and modification to the existing power plant at [REDACTED] Receiver Site in order to accommodate the additional equipment required. Funds in the amount of [REDACTED] are available for this work.

25X1A

2. The attached drawings and requirements are provided as a guide and are not intended to limit your negotiations.

25X1A

2 Atts.
As Stated



	C/RPC	DATE 2/24/67
2	DC/RPC	2/24/67
1	EO/REC	2/24/67
	C/ACQ	
3	C/CE	2/23/67
4	C/UE	2/24/67
	RE TURN TO COB FOR	
	4/20/67	
	CENTRAL FILE	

ILLEGIB



REQUIREMENTS RECEIVER SITE POWER PLANT

ELECTRICAL

1. Work Included - Furnish and install all materials, labor, equipment, appliances and services as specified and/or shown on the drawings (C5386-S-02). Furnish only labor and material to install items of equipment furnished by the Government. The following items shall be furnished and installed completely by the contractor.

- A. All conduit and wiring.
- B. Lighting fixtures and convenience outlets.
- C. Connections to mechanical and electrical equipment to include control wiring and wiring to remote panel.

D. Transformer, 3 phase, 300 KVA, 60 cycle oil-filled, primary to match existing incoming power, Standard NEMA taps, secondary 277/480 three phase four wire connected to GFE no-break drive motor.

Furnish labor and material to install and/or rewire the following Government furnished equipment:

- A. Two (2) 200 KW diesel generators.
- B. Control and distribution switchboard with remote panel and external dummy load.
- C. One (1) 175 KW no-break power unit with control cabinet.

MECHANICAL

1. Work Included - Expansion to the existing building as indicated on the attached drawing C5386-S-02. Dimensions indicated are minimum allowable. Furnish and install four-way travelling crane of 10 tone capacity over no-break generator as indicated on drawing. Provide bases to support generating equipment and louvered openings through walls with ducts between engine radiators and openings. Intake louvers should have at least twice the total radiator area of the generating equipment. Provide 500 gal. day tank with dual pump from main storage tank. Install 1/2" supply and return lines from day tank to no-break generator. Reconnect fuel piping to 200 KW diesel units. Install GEE engine silencers to outside of building including all supports and weather seals.

MISCELLANEOUS DATA

1. Weight of no-break unit is approximately 26,000 lbs. supported at (6) points on 12" X 12" steel plates.
2. Weight of 200 KW generators is approximately 11,000 lbs. and is supported at 6 points on 6" X 6" steel plates.

SYSTEM NO. 2

Revised 7 February 1966

1. DESCRIPTION

A split bus system fed by two commercial line breakers to separate buses which will hereafter be referred to as Bus # 1 and Bus # 2. Bus # 1 will be the preferred bus. Operating voltage 120/208 3 phase 4 wire 60 cycle.

A no-break generator set will feed bus 1 only, and two auto-start generators will feed both buses through breakers. Incoming and all generator breakers will be electrically operated and interlocked to provide the following sequence of operations.

A. NORMAL OPERATION

- (1) Commercial line breakers closed to bus 2 and no-break input.
- (2) No-break generator output breaker closed to bus 1.
- (3) Auto-start generator breakers open and both generators set to automatic operation. 2 each 235 KW.

B. FAILURE

(1) In event voltage and frequency of any incoming phase falls below 90% (adjustable) and remains there for an adjustable period of time up to 15 seconds, the commercial line breaker to bus 2 will be tripped to open and pre-selected generator signalled to start.

(2) After the generator comes up to speed and voltage, its breaker will close onto bus 2.

(3) Bus 1 will be fed by no-break unit and no outage on this bus should have occurred.

(4) If bus 1 should experience a voltage drop below 190 volts, or a frequency drop below 58.5 cps, the no-break breakers will be tripped to open and the auto-start generator in operation will be closed onto bus 1,

SWITCH GEAR PROVIDED AS
PER THESE DRAWINGS

Revised 7 February 1960

Indicating lights, commercial breaker position, red closed, green open

Voltage and frequency sensing, commercial line and bus 1 w/
delay circuits

Indicating light, commercial power available all phases

Breakers, incoming commercial power to bus 1 and 2 with controls
1600 amp frame, adjustable trip. Westinghouse DB-50

Breaker, commercial power to no-break 600 amp frame. Westinghouse
DB-25

B. GENERATORS

Breakers, no-break feed to bus 1, 600 amp frame Westinghouse DB-25.

Breakers, generators to bus 1 and 2, 1600 frame Westinghouse DB-50

Indicating lamp showing no.break fail

Indicating lamps showing breaker position, red closed, green open

Switch, engine selection OFF-1-2

Switch, engine to bus control OFF-Bus 1 to Gen 1 - Bus 2 to Gen 2

Switch, momentary, back to commercial

Switch, eliminate commercial power to bus 1

Reverse power relays

Switch, auto-manual breaker operations

Switch, remote breaker operator, load bank to generators, keyed.

C. REMOTE PANEL

Freq meter 55-65 cycles

Freq meter switch 3 pos. OFF-Bus 1 - Bus 2

Voltmeter 0-300 V

Voltmeter switch 8 pos. Bus 1 OFF-1-2-3 Bus 2 OFF-1-2-3

Indicating light - Commercial power available all phases

Indicating light - No-break running, green

Revised 7 February 1966

or the second auto-start generator will be signalled to start and it closed onto bus 1 after it has reached operating speed and voltage. This choice will be made by the positioning of a selector switch mounted on the switchgear. An indicating lamp will light showing failure of the no-break systems.

C. RETURN TO NORMAL

After the commercial power has returned to 95% (adjustable) voltage on all phases and frequency and remains there for 30 min. (adjustable 0-30), an indicating lamp will light and a momentary switch may then be depressed when desired. This switch will trip the auto-start generator breakers to bus 2 and reclose the commercial breaker to bus 2. If the no-break generator has failed the auto-start generator breaker feeding bus 1 will be opened and the commercial line breaker to bus 1 will be closed also. A switch will be provided to prevent this last operation if it is desired to maintain an auto-start generator feeding bus 2 rather than commercial power.

D. MANUAL

An auto-manual switch will be provided to eliminate the automatic operation and allow full manual (electric) operation of all breakers.

2. INSTRUMENTS

A. COMMERCIAL POWER

Frequency meter 55-65 cycles

Kilowatt hour demand meter

Ammeter 0-1500A

Ammeter switch 3 phase 4 pos. OFF-1-2-3

Voltmeter 0-300

Voltmeter switch 3 phase 4 pos. OFF-1-2-3

Revised 7 February 1978

Indicating light - No-break fail, red

Indicating lights breaker positions

Switch, back to commercial power

Indicating light, Auto-gen fail, red

D. DISTRIBUTION

Bus # 1

2 each 400AF, 250AT

2 each 400AF, space only, less breaker

} ONE OF THESE
FOR UPS LOAD

Bus # 2

2 each 400AF, 400AT

2 each 225AF, 100AT

2 each 225AF, space only, less breaker

2 each 400AF, space only, less breaker

} ONE OF THESE FOR
NON-TECH LOAD -
ONE FOR NEW AIR
(one for Richard)

E. LOAD BANK

A 250 KW load bank for remote location will be provided and fed from each generator breaker. Line operated moulded case 800A breakers will be provided as part of load bank, controlled from the switchgear and interlocked to allow one generator at a time to feed load bank but with provisions to parallel if required. The load bank will have 5 switched steps of 50 KW each, be suitably protected, forced air cooled (vertically or horizontally) and for installation outdoors at maximum ambient temp of 120° F.

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